

ABSTRACT

A fire retardant polymer composition is provided. The fire retardant polymer composition is formed of a polymer material and a polycondensation product of a plurality of monomers of an at least partially hydrolyzed phosphinate-chelated metal oxide precursor.

A process for making a flame retardant polymer composition is also presented. The process includes contacting a metal oxide precursor with a source of organophosphinate anions to form a phosphinate-chelated metal oxide precursor. The phosphinate-chelated metal oxide precursor is at least partially hydrolyzed and then condenses to form a phosphorous-containing metal oxide sol. The sol may be contacted with a polymer material, which is then polymerized or solidified.